Coretec's AC servo presses were first sold in 2000, and more than 5,000 have been shipped.

They are used in press facilities around the world.

## Features of AC servo press

### Compact design that is easy to incorporate into equipment

Its compact design is comparable to that of a hydraulic cylinder, allowing for space-saving press equipment and small-pitch array designs.

### AC Servo Press Applications

- Press-fitting (bearings, bushings, pins, etc.)
- Crimping
- Distortion removal
- resin molding
- Lamination (LCD panels, etc.)
- punching
- heat welding
- Welding clamp
- Various tests (durability, etc.)

### The GS series has been added, expanding the lineup

The GS series has been added to the existing CS series and MS series.

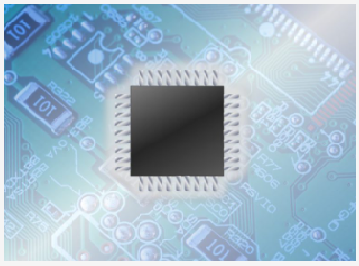
- The GS series has improved performance through a stronger motor and is now sensorless.
- The MS series is a model with large thrust, high load, and absolute specifications that excels at slow speed operation.

### Highly rigid structure

High rigidity achieved with intermediate flange structure. Load cell built-in, also supports pulling operation (except MS200)

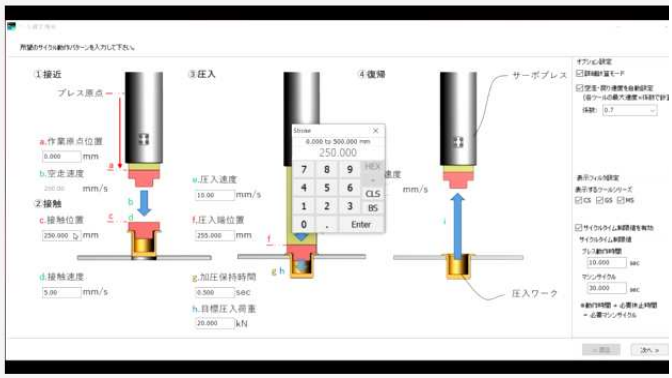
### Built-in microprocessor

Equipped with a load cell amplifier with a built-in microprocessor, it has a linearity correction function and tool operation history in addition to tool ID.



## Convenient software to support model selection

Automatic servo press model selection tool "WPS Servo Press Simulator"




This is a newly released simulation software for AC servo presses.
Simply enter your operating conditions, such as stroke and thrust, and it will display compatible models from a total of 51 models in just a few seconds.
You can select the optimal AC servo press by checking predicted results such as regenerative power, cycle time, and load factor.

This is an excellent tool that can also be used to verify the servo press's "pull" operation program.


You can **download it for free** here

# Dedicated controller (WPS series)

## Supports external linear encoders

Encoders are the foundation of position information.
In a semi-closed loop that uses information from the servo motor's built-in encoder, accurate strokes cannot be obtained due to distortion caused by load and the effects of expansion and contraction caused by heat.
To achieve position control that eliminates errors, CORETECH has adopted an "external linear encoder (optional)."

External linear encoder (optional) information is here

## Maintenance-free "battery-less"

The controller itself no longer has a battery!
All settings are stored in non-volatile memory, and the clock function is powered by an electric double layer capacitor. This ensures safety during transportation, and there are no problems even when the controller is loaded onto air cargo.

## Easily create operation programs! "Work Explorer"

(Patent: No. 6754153)


This is a new, unique function added to the WPS controller.
Using this function, the contact distance with the workpiece is automatically measured and data is collected.
Then, by following the wizard screen and entering values, an operation program is automatically generated.

The optimum program for each workpiece can be automatically generated, which contributes to simplifying the process.

## "Load-free inching" prevents overload errors

I want to determine program parameters while watching the workpiece state using inching operation! However, inching operation can cause overload errors...
"Load-free inching" solves this problem in one go.

"Load-free inching" uses inching operations to obtain the parameters necessary for creating a program while checking the machining depth of the target workpiece.
These obtained parameters are reflected in a pre-prepared template, allowing customers to easily complete the desired operation program.

Peak load and peak stroke are monitored, allowing you to inch to the desired machining depth without worrying about overload abnormalities.

1) Immediately after the inching operation, the ram rises to a position where the load is sufficiently low.
2) The peak stroke resulting from the inching operation is stored in the system.
3) For the next inching operation, the ram descends to a position where the previous peak stroke is added by a specified inching amount.
4) By repeating operations 1 to 3, highly accurate inching operation is achieved.

When the target machining depth is reached, the information on "contact position," "peak load," and "peak stroke" obtained from the inching operation up to that point is
There are three types of program templates:

| | |
|---|---|
| Load Target Template | The press will operate up to the specified load value, and the peak load during inching will be the target load. |
| Location target template | The press operation will be performed up to the specified position, and the peak stroke during inching will be the target position. |
| Press-in length target template | Using the contact position as the reference, press operation is performed at the specified stroke, and the target press-fit length is the stroke obtained by subtracting the contact position from the peak stroke during inching. |

## Improved judgment functions: "Frame Judgment," "Post Command," and "External Judgment"

We have also improved the **"judgment"** function for processes using servo presses .

- **"Frame detection"** determines the waveform data passing through four rectangular frames.
- **"Post command"** executes various processes using waveform data acquired after the machining process is completed
- **"External Judgment"** allows you to freely customize the judgment method

### Post Instructions

There are six types of post commands available: post zone judgment, post frame judgment, load acquisition +, load acquisition -, load change rate acquisition +, and load change rate acquisition -, which allow for processing that is not possible with real-time processing. For example, the "load change rate acquisition +" command can be used to acquire the load change rate 1 mm before the peak stroke.
In addition, when determining zones, zone stroke correction can be performed based on the blocking point (bottom point), making it possible to set tight zones.

### External Judgment

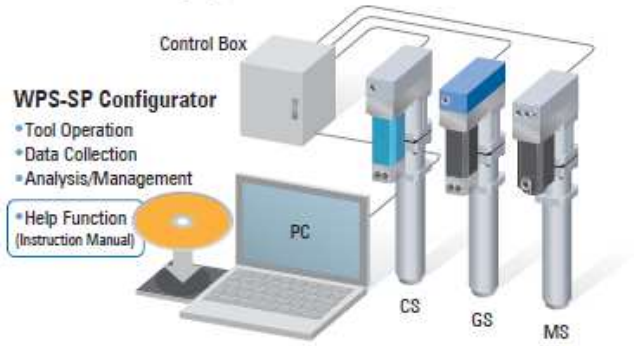
"External judgment" is a function that links the WPS SP Configurator with an external judgment application to make unique judgments. An external judgment application created based on certain rules works in conjunction with the WPS SP Configurator. The
external judgment application allows users to develop their own judgment methods that are not available in the WPS SP Configurator. The results of external judgment execution are reflected in the WPS Controller's judgment output, OK/NG. They are also reflected in the execution result file saved by the WPS SP Configurator.

The functionality for linking with WPS SP Configurator has been made available to users as an API and a DLL. We will also release a sample created in Microsoft's development environment, C#, at source code level. Your unique judgment method, which you may have requested from a servo press manufacturer but never implemented, will soon be a reality in your factory.

# Press System Designed to Pursue Ease of Use

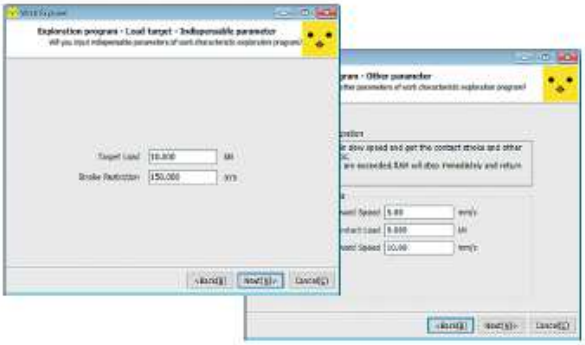
## Completed in All-in-One Application Software

One software package covers everything from tool operation to data collection, analysis and management for all servo tools of the CS/GS/MS Series. The software is available in multiple languages. There is also a full range of help functions to provide operability and ease of understanding beyond the instruction manual.




## Work Explorer Function

Simply set the workpiece and enter a few parameters interactively to start the tool. The easiest and most realistic method to create a program, which finds the contact position with the workpiece and automatically generates an operating program, is available.



## Easy-to-Understand Programming Methods

Programming methods include adoption of a "block method" that makes it easy to grasp the flow of operations and a "label method" that allows names to be attached to variable parts for ease of understanding.
The function for rewriting programs from the PLC has been inherited. Equipped with a function for converting programs from CPS to WPS style.

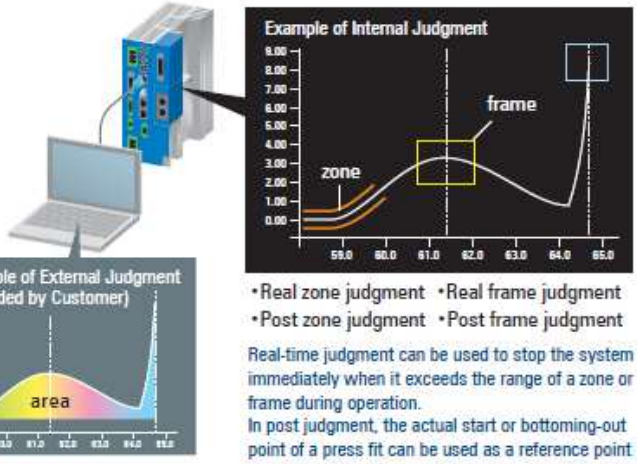
Main Body | Program Table | Judgement Table | Registers Label | Comment

| Block | Block Name | Step | Invalid | Loop | Instruction | Parames |
|---|---|---|---|---|---|---|
| 01 | Initial | 1 | | | Mechanical Brake | Off |
| | | 2 | | | Data Save | Begin |
| | | 3 | | | Stroke Limit+ | Stroke Limit |
| | | 4 | | | | |
| 02 | Load Protection | 1 | | | Load<< | Protection Load |
| | | 2 | | | Mul | Protection Load |
| | | 3 | | | Load Limit | Protection Load |
| | | 4 | | | | |

Programming Screen (Partial)

## Expanded Post-Operation Judgment Function

In addition to Coretec's characteristic real-time judgment function, we have added a post-operation judgment function that is processed internally by the controller after operation. In addition to standard zone and frame judgments, upper and lower limits can be judged using general numerical values.
Moreover, a new function to link with external judgment applications has also been added. This allows each customer to use their own preferred judgment methods. The internal and external judgment results are combined for a comprehensive pass/fail judgment.



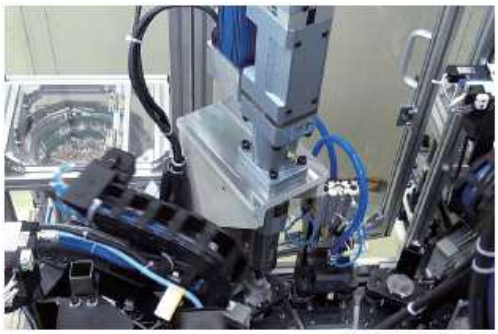

Operation data is sent and judgment results are captured.

•Real zone judgment •Real frame judgment
•Post zone judgment •Post frame judgment

Real-time judgment can be used to stop the system immediately when it exceeds the range of a zone or frame during operation.
In post judgment, the actual start or bottoming-out point of a press fit can be used as a reference point after operation so that the stroke value can be corrected before judgment.

## Operation Simulator

Software to verify press operation on a PC in advance is available.
This enables customers to smoothly select and start up their tools.



Terminal Press Fitting

## Applications

Press fitting (bearings, bushings, pins, and the like), staking, bending, forming, joining, punching, cutting, engraving, clamping, straightening, hot press, inspection, etc.

Stack compression, valve seat/guide press fitting, pressurized height measurement, bending of electric component terminals, long-term constant pressure, ultrasonic welding, heat welding, various testing (endurance test, and the like), etc.

## Use Examples

**C-Frame Type** **4-Column Type** **Desktop Type**

Coretec can deliver servo presses of 2 to 200 kN with various specifications as well as peripheral electrical equipment.

**Multiple-Shaft Synchronized Press**

Pressure can be applied to large workpieces in an even manner by dispersing the pressurizing points.
Please consult with Coretec for high thrust forces exceeding 200 kN.

## To customers considering purchasing


Illustrated explanation of AC servo press application examples

Application example


You can check the required load and OK/NG judgment for free.

Sample Test Service

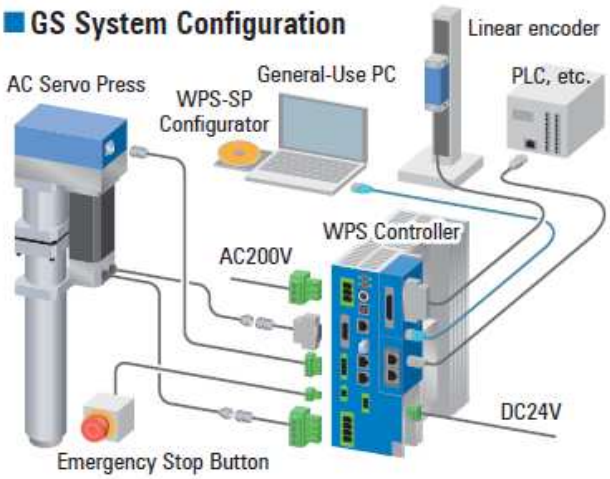

We have compiled inquiries regarding estimated delivery dates and functionality.

Frequently asked questions

## System Configuration

### WPS Controller

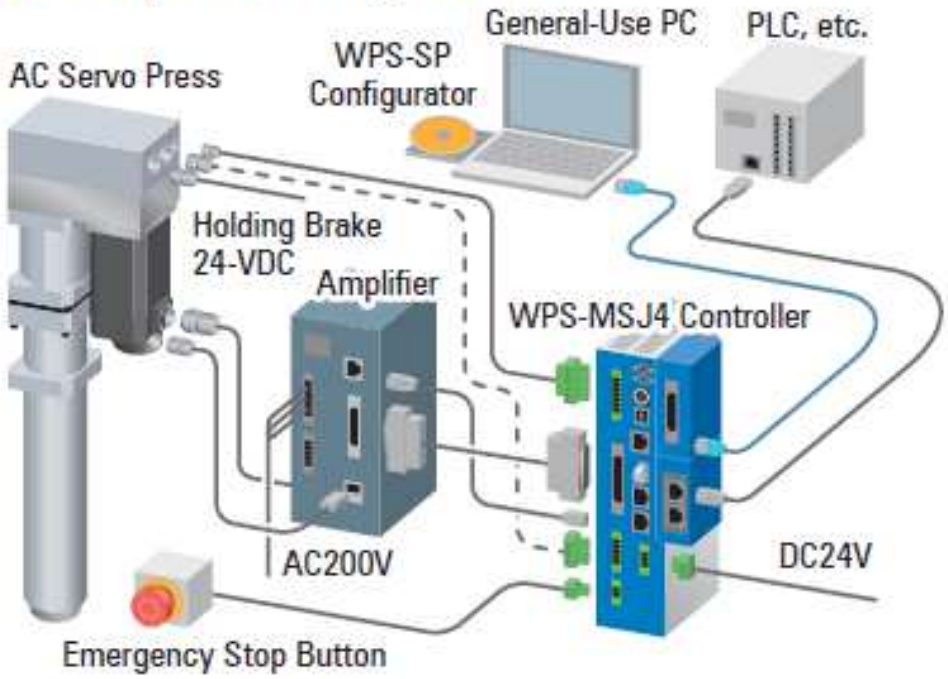
#### GS System Configuration





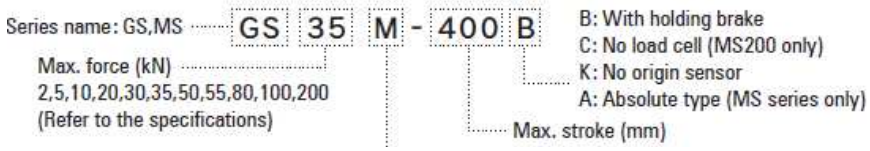
Equipped with two expansion slots for optional circuit boards. (All series)

#### MS System Configuration




Equipped with two expansion slots for optional circuit boards. (All series)

## Tool Model Notations

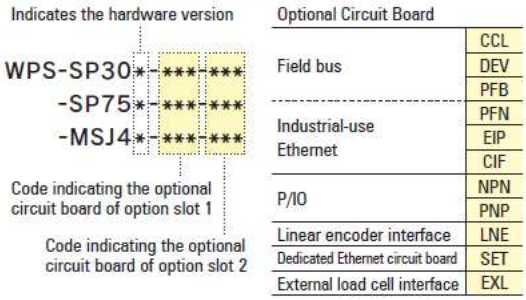



# WPS Controller

### Controller Specifications

| Product name | Compact controller | Standard controller | MSJ4 controller |
|---|---|---|---|
| Model | WPS-SP30 | WPS-SP75 | WPS-MSJ4 |
| Control power | DC24V±10% | | |
| Operating power | 3-phase 200-230V±10% 50/60Hz | | — |
| Cooling method | Natural air cooling | Built-in fan forced air cooling | — |
| Regenerative function | — | 80-W regenerative resistance | — |
| External size (mm) | 65×180×242 | 75×190×242 | 51×110×230 |

### Controller Model Notations




| Optional Circuit Board | |
|---|---|
| Field bus | CCL |
| | DEV |
| | PFB |
| Industrial-use Ethernet | PFN |
| | EIP |
| | CIF |
| P/IO | NPN |
| | PNP |
| Linear encoder interface | LNE |
| Dedicated Ethernet circuit board | SET |
| External load cell interface | EXL |

### Specifications

| Model | GS2 | GS5 | GS5M | GS10 | GS25 | GS25H | GS30 | GS35 | GS35M | GS50 | GS55 | GS80 | MS2L | MS10M | MS30M | MS50 | MS100 | MS100M | MS100H | MS200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Max. instantaneous force (kN) | 2 | 5 | 5 | 10 | 25 | | 30 | 35 | | 50 | 55 | 80 | 2 | 10 | 30 | 50 | 100 | | | 200 |
| Applicable force (kN)*1 | 1.5 | 3 | 5 | 7 | 15 | | 21 | 35 | | 40 | 45 | 70 | 1.5 | 7 | 21 | 45 | 70 | | | 150 |
| Max. stroke (mm) | 100 | 100/250 | | | 100/200/350 | | | 200/400 | | | 100/200/350 | | 100 | 100/250 | 100/200/350 | | | | | 100/200 |
| Special stroke (mm) | 200 | 150 | | | 400 | | 400/500 | - | | | 400/500 | | 200 | 150 | 400/500 | | | | | 300 |
| Max. speed (mm/s)*2 | 300 | 400 | 240 | | 350 | 180 | 300 | 320 | 215 | | 210 | 140 | 215 | 100 | 130 | 250 | 150 | 90 | 50 | 110 |
| Controller model | WPS-SP30 or WPS-SP75 | | | | WPS-SP75 | | | | | | | | WPS-MSJ4 + Amplifier | | | | | | | |
| Load cell accuracy | ±1.5% @FS (Repeatability ±0.5% @FS) | | | | | | | | | | | | | | | | | | | |
| Positional repeatability | ±0.01mm *3 | | | | | | | | | | | | | | | | | | | |
| Max. power supply capacity (kVA) | 0.3 | 0.75 | | | 3.5 | | | 4.2 | | | | | 0.3 | 0.9 | 3.5 | 5.5 | 7.5 | | | 10 |
| Brake holding load (kN) | 0.5 | 0.6 | 1 | | 2.8 | | 3.2 | 1.8 | | 2.6 | 2.5 | | 0.7 | 1.1 | 4.1 | 1.8 | 2.5 | | | 23.4 |

*1: This is the applied force in consideration of the mechanical life. *2: Coretec recommends using CS and GS models at 75% or less of the maximum speed. A maximum press fitting speed of 30 mm/s is recommended for all models. *3: Under the same conditions * Please feel free to inquire about specifications for models not indicated above.

## notice

2023.11.30Further

notice regarding discontinuation of servo press controller (CPS, BS) production

---

2022.06.13

Notice regarding non-compliance with CE marking for CPS controllers

---

2022.03.07Notice

of postponement of discontinuation of servo press controller (CPS and BS series)

---

2021.11.01Notice

of discontinuation of servo press controllers (CPS and BS series)

---

2021.08.23

[Notice] New Servo Press Series Added to Lineup

A new lineup will be added to the new "GS" series in the fall of 2021. Performance improved while keeping the same size! Click

2021.04.01

We have released the new "WPS Series" controller for AC servo presses.

---

2018.4.2Notice

of discontinuation of BS series servo press productionAttachment

: Comparison of BS series and MS series servo press

---

2016.2.26We

have released the MS02-100B, a small AC servo press with a low thrust of 2kN.

---

2011.11

We obtained a patent for our AC servo press.

---

2009.4

The IPS type servo press controller and servo press tool SP series became discontinued products as of April 2009.

---

July 2008:

The BS/CS series complies with European safety standards (CE marking).